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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,333	02/07/2002	Yoshiyuki Hirayama	HITA.0161	4593

7590

08/09/2005

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EXAMINER

RICKMAN, HOLLY C

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/067,333	<b>Applicant(s)</b> HIRAYAMA ET AL.	
	<b>Examiner</b> Holly Rickman	<b>Art Unit</b> 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2,4-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/26/05 has been entered.

### ***Claim Objections***

2. The objections to claims 1, 4, and 6-7 are withdrawn in view of Applicant's amendments.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The rejection of claims 1-2, 5-6, and 8-10 under 35 U.S.C. 103(a) as being unpatentable over Girt et al. (US 6645614) in view of Doerner et al. (US 6537684) is withdrawn in view of Applicant's amendments.

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5. Claims 1-2, 5-6, and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doerner et al. (US 6537684).

Doerner et al. teach a magnetic recording medium having a microcrystalline seedlayer, an underlayer formed from CrTi, a first magnetic layer formed from CoPtCr containing 0-15 at% Pt, a Ru spacer layer having a thickness of 0.4nm, a second magnetic layer formed therein containing Co as a main component (see col. 5, lines 55-67). The reference fails to disclose the specific range of 3-9 at% Pt for the first magnetic layer.

Doerner et al. teaches that the amount of Pt added to the CoPtCr affects the anisotropy of the film (col. 6, lines 13-21). It would have been obvious to one of ordinary skill in the art at the time of invention to choose the optimal amount of Pt from the range of 0-15 at% in order to achieve optimal anisotropy in the CoPtCr magnetic layer.

6. The rejection of claim 4 under 35 U.S.C. 103(a) as being unpatentable over Girt et al. (US 6645614) in view of Doerner et al. (US 6537684), as applied above, and further in view of Wang et al. (US 2002/0098389) is withdrawn in view of Applicant's amendments.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doerner et al. (US 6537684) in view of Wang et al. (US 2002/0098389).

Doerner et al. teaches all of the limitations of the claim, as detailed above, except for the use of CrTiB underlayer in place of the CrTi layer taught therein.

Wang et al. teach the equivalence of CrTi and CrTiB for use as underlayers in magnetic recording media underneath Co alloy layers (see claim 5).

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It would have been obvious to one of ordinary skill in the art at the time of invention to substitute CrTiB for the CrTi layer taught by Doerner et al. in view of the functional equivalence of the two materials.

8. The rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over Girt et al. (US 6645614) in view of Doerner et al. (US 6537684), as applied above, and further in view of Sakawaki et al. (US 2002/0160234) is withdrawn in view of Applicant's amendments.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doerner et al. (US 6537684) in view of Sakawaki et al. (US 2002/0160234).

Doerner et al. teaches all of the limitations of the claim, as detailed above, except for the use of an amorphous film containing Ta and Ni formed between the substrate and the CrTi layer.

Sakawaki et al. teach the use of NiTa as an orientation determining layer under a Cr-based underlayer wherein the NiTa layer causes the Cr underlayer to have predominant orientation plane of (200) plane thus allowing the overlying magnetic layers to have a (110) orientation (paragraphs [0031]-[0038]).

It would have been obvious to one of ordinary skill in the art at the time of invention to add a NiTa layer underneath the CrTi layer taught by Sakawaki et al. in order to provide the recording medium with the preferred (200) orientation for the underlayer and the preferred (110) orientation for the magnetic layers.

***Response to Arguments***

10. Applicant's arguments filed 5/2/05 (after final amendment entered as per RCE) have been considered but are moot in view of the new ground(s) of rejection.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Holly Rickman  
Primary Examiner  
Art Unit 1773